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ABSTRACT

A PILOT STUDY WAS CONDUCTED TO EXPLORE THE FRUITFULNESS OF SOCIOMETRIC PROCEDURES FOR STUDYING THE INFORMAL SOCIAL ORGANIZATION WITHIN A SCHOOL. SUBJECTS WERE THE 69 FACULTY MEMBERS OF A SUBURBAN JUNIOR HIGH SCHOOL WHICH SERVES A WHITE MIDDLE-CLASS COMMUNITY. THEY WERE WHITE, 55 PERCENT FEMALE AND 45 PERCENT MALE, WITH AN AVERAGE AGE OF 35. THEY RESPONDED TO A SOCIOMETRIC QUESTIONNAIRE INDICATING THE PERSONS (TEACHERS OR MEMBERS OF THE PROFESSIONAL STAFF) (1) WHOM THEY WOULD SEEK OUT FOR ADVICE, (2) WHOM THEY LIKED, AND (3) WHOM THEY ADMIRED FOR THEIR TEACHING SKILLS. VARIABLES STUDIED WERE SEX, AGE, AND DEPARTMENTAL AFFILIATION. THE FINDINGS REVEAL A STRONG ORGANIZATION ALONG SEX LINES FOR MALES, WHO OVERCHOOSE IN ALL THREE CATEGORIES MEMBERS OF THEIR OWN SEX. DEPARTMENTAL AFFILIATION, WHICH ALSO SHOWS A STRONG EFFECT ON THE SOCIOMETRIC CHOICES IN ALL THREE CATEGORIES, IS ASSOCIATED PARTICULARLY WITH ADVICE AND LIKING. AGE SHOWS THE WEAKEST RELATIONSHIP TO CHOICE OF THE THREE VARIABLES EXAMINED. SINCE LITTLE IS KNOWN ABOUT THE SOCIAL ORGANIZATION OF THE SCHOOL, THESE AND OTHER FINDINGS OF THE STUDY ARE POTENTIALLY RELEVANT TO UNDERSTANDING INFLUENCE PROCESSES WITHIN THE SCHOOL. (AUTHOR/JS)

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# A Sociometric Study of a Junior High School Staff

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## Abstract

This paper shows the effect of three rudimentary background variables on sociometric choices. The variables are sex, age, and departmental affiliation. Respondents indicated whom they would seek out for advice, whom they liked, and whom they admired for their teaching skills. The findings reveal a strong organization along sex lines for males, who overchoose in all three categories members of their own sex. Departmental affiliation is associated particularly with advice and liking. Age shows the weakest relationship to choice of the three variables examined. Since little is known about the social organization of the school, these and other findings of the study are potentially relevant to understanding influence processes within the school.

Change in educational institutions at all levels is occurring both by design and by default. In the years ahead, many issues presently unresolved are likely to be argued and decided--at least locally, and temporarily. Among the issues are: what should be taught, how should students be grouped, what role should students play in decision making of various kinds, who should control the schools, how should teachers relate to students, how should the schools relate to the community, and how can teachers advance their professional and economic interests. These questions will probably meet with different answers in different schools and communities. We suggest that the attitudes of teachers will play a part in the resolution of issues relevant to the educational process and that their attitudes will be influenced by informal social relationships among them.

The purpose of this paper is not to study issues, but to examine some types of social organization among teachers which may have a bearing on influence processes. As Fennessey (1968) has observed, a good deal of theoretical and empirical work has been done on the impact of the primary work group and on the nature of the influence process, but this perspective has never been applied to the teachers in public elementary and secondary schools, and previous work does not yield a body of firm predictions about the way in which people will form social groups or influence each other's judgments in the school setting.

The work reported in this paper is a pilot study to explore the fruitfulness of sociometric procedures for studying the informal social organization within a school.

## PROCEDURE

### The School

The school selected was chosen strictly for reasons of easy access, and not for any special characteristics it exhibits. The principal had accepted and encouraged other research projects in the past year with minimal dissent from the faculty, and this was judged a good school in which to obtain "sensitive" interpersonal information without investing sizable amounts of time and effort in persuasion.

The school is a suburban junior high school, nine years in operation, which serves a white middle to upper middle class community. The student body numbers approximately 1,200; the professional staff (faculty, administration, guidance) 75; the faculty alone, 67. The principal is a man in his early 40's, whose relaxed but effective administration of school personnel and school issues had been observed informally over the year. The average age of teachers in the school is 35: 68% of the professional staff is not yet 40, and only 11.6% are over 50. The sex composition of the professional staff is 57% female, 43% male; for teaching staff, these figures are 55% and 45%, respectively. The professional staff is white, with the exception of one remedial teacher; largely educated in teacher's colleges; and from a somewhat better-educated

family background than the average for white elementary or secondary schools in the metropolitan northeast (Coleman et al., 1966).

## The method

Sociometric data were gathered as part of a larger study of achievement motivation, curiosity, and empathy for students.[1] A foreign graduate student with interests in communication networks took over presentation of research objectives and the administration of procedures.[2] Some details on the conduct of the research are given below to specify the context in which data were collected.

The principal adopted a leading role in obtaining faculty agreement to the research. He announced at the faculty meeting that a Norwegian sociologist currently at a local university had requested permission to gather data for a cross-cultural study of teachers. He suggested that they hear his proposal at the next faculty meeting and then decide whether they wished to go along with it. The research request was subsequently made with the general explanation that the investigator was interested in the way teachers viewed students and work situations in the two societies. He explained that the procedures involved answering questions and reacting to pictures, and that all responses would be kept confidential. The faculty later voted unanimously to participate, with some abstentions from voting. No attempt was made, then or at the end of testing, to assess their actual feelings about participation.

Testing was carried out in the next regularly-scheduled professional staff meeting. Sixty-nine individuals were present and (1) wrote stories to four pictures, as part of a "test of creative imagination" subsequently scored for need achievement and curiosity; (2) took the Minnesota Teacher Attitude Inventory (MTAI); and (3) filled out a sociometric questionnaire.

The sociometric data

Three questions provide the data which are analyzed in subsequent sections of this paper. They are:

1. Suppose that in one of your classes the number of students participating in discussions was very small and you did'nt enjoy teaching the class. Who are the three persons you would be most likely to go to for discussing problems of this general kind?

2. Name the three teachers, regardless of their field, whom you regard most highly for their teaching skills.

3. Who are the three people on the professional staff of the school that you like best on a personal basis?

These questions are abbreviated to advice, skill, and like in the discussion which follows.[3]

The non-response rate for the sociometric questionnaire needs to be set against that for the other tasks. No one failed to respond to either the story-writing procedure or MTAI. One respondent gave no replies under any of the three sociometric questions; five respondents named no

one on two of the three questions.[4] The instructions did not strongly underline the request for three choices in each category, and many respondents made fewer than three. The average number of choices for advice was 1.7; skill, 1.8; like, 2.3. Many of the non-respondents in the first case were administrative personnel, to whom this question did not seem personally relevant. Omitting these individuals, the mean number of choices for advice is nearly 2.

## RESULTS

Other studies of sociometric choice is elementary school classes, college student classes and small communities have shown that there is a marked tendency to associate with people on the basis of common characteristics (Lindzey & Borgatta, 1954). In this case it seems a reasonable hypothesis that factors such as sex, age, or departmental affiliation will vary among the categories of <u>advice</u>, <u>like</u>, and <u>skill</u>. High status, defined as being principal, vice-principal, or a department chairman, should also affect interaction processes, especially as an attribute of those selected for advice or nominated for their skills.

The analysis which follows shows the degree to which people make choices within their own sex, department, and age group, and among high status persons. The observed proportion of within-group choices was compared with the expected proportion, had choice been random with regard to each of the four variables, by means of a binomial test (Dixon & Massey, 1957, p.230).

Who is chosen by whom?

1. Effect of sex

Table 1 shows the proportion of male and female teachers who choose persons of the same sex for each of the three areas. To interpret this Table accurately, it is important to bear in mind that the potential advice and like selectees are 57% female and 43% male. (These figures reflect total professional staff.) For the category of teaching skills, the figures are 55% and 45%, respectively. (These figures reflect faculty composition only.)

Table 1

Per Cent of Same Sex Choices

| | Observed Proportions | | | Expected Proportions |
|---|---|---|---|---|
| | Advice | Like | Skills | |
| Chooser | | | | |
| Men | 91*** <br> 90[a],*** | 83*** | 56** | 43 (45) |
| Women | 31*** <br> 45[a],* | 60 | 59 | 57 (55) |
| All | 56 | 69*** | 61** | 51 |

[a]Excluding principal from calculations.

*p .05
**p .01
***p .001

It is clear that men show a disproportionate preference for naming men in all categories, whereas women do not overchoose other women. The advice category shows especially marked sex differences. Men are strikingly unlikely to discuss teaching problems with women teachers, whereas women actually prefer to discuss such problems with the other sex. Excluding the principal (a man) from the calculations does not raise the proportion of women seeking advice from women to more than 45%, still only half the proportion of men with the same-sex preferences. This pattern may reflect the fact that it is not easy for a man to admit failure to a woman, whereas it is acceptable (and even congruent with time-worn female sex-role conceptions) for a woman to exhibit flaws. The other area of marked same-sex orientation for men is personal liking of teachers. In the area of regard for teaching skills, the barrier placed by males between the sex is still present, but somewhat thinner. It seems easier for a woman teacher to become accepted by men as a skilled teacher than as a potential friend or advisor.

2. Effect of department

The analysis of the effect of departmental organization on sociometric choices was carried out by comparing the observed proportion of in-group choices with the expected proportion. That is, given the number of choices actually made, the expected proportion of naming members of department x reflects the department's relative size. As Table 2

shows, the "average" department comprises 12% of the faculty, but in-group choices average 52, 48, and 22 per cent respectively for advice, like and skills. These values all differ significantly from the expected (random) values. All thirteen departments in the school--the four major academic ones (Science, Mathematics, Social Studies, and English) and the nine small departments--were included in this analysis.[5]

Table 2

Per Cent of Within Department Choices

| | Average Observed Proportion | | | Average Expected Proportion |
|---|---|---|---|---|
| | Advice | Like | Skills | |
| Respondents | | | | |
| All | 52*** | 48*** | 22** | 12 |

** $p < .01$
*** $p < .001$

The range is narrower and the mean proportion of within-department choices highest for the advice category. Random choice would give even the largest department no more than 15% of all choices, whereas the observed choices for the four largest departments are in three cases over

50% and in the remaining case 38%. Teachers from the small departments are especially likely to choose each other for advice. None of these departments has more than 8% of the teachers, but 59% of their choices, on the average, go to members of their own small department. Their high proportion of in-group choices may reflect their narrower specialization, precluding choice of others for advice, as well as the existence of barriers to contacting others due to the several part-time appointments in the smaller departments.

The strong within-department search for advice seems to reflect the judgment that people who teach the same general subject matter will have encountered similar teaching problems. (Easier access to members of one's department through regular departmental meetings may also play a part in advice choices.) One major academic department, however, is very unlikely to seek among its own members for advice. This department contains 90% women, and as Table 1 shows, women prefer men for this function. Skills choices, however, more often cross departmental lines, suggesting an appreciation of stylistic features of teaching that transcends particular subject matter. It is interesting that the small departments (which are the most disposed to overchoose from within their own ranks for advice and like) behave much like the other departments with respect to choice of persons for skills. This suggests some concensus on who the "good" teachers are. In fact, there are three teachers, all from the major academic departments, who clearly "star" in this category.

The existence of a concensus concerning their skills is suggested by the fact that they are chosen, on the average, only very slightly more often by members of their own department than by non-members. The most frequently named teacher actually gets 87% of her nominations from people not in the same department.

The tendency to choose persons liked best within department is also quite strong. The proportion varies from 24 to 59% among the major academic departments. An average 44% of the choices from members of the small departments go to persons in the same department.

3. Effect of Age

Table 3 shows the tendency to choose persons in the same age group as oneself for each of the three categories. If the choices were unaffected by age, the proportion of within-age choices in a given age group should correspond to the percentage of teachers in that age group. Teachers were classified in four age groups: under 30, 30-39, 40-49, and 50 years or older. Within age group choices were defined as choices within the same age group as the chooser.

Table 3

Per Cent of Choices Within Age Group

| | Observed Proportions | | | Expected Proportions |
|---|---|---|---|---|
| Age group | Advice | Like | Skills | |
| under 30 | 22* | 44 | 40 | 42 |
| 30-39 | 43+ | 40+ | 41+ | 25 |
| 40-49 | 20 | 21 | 42* | 22 |
| 50+ | 0 | 16 | 12 | 12 |
| All | 23 | 36+ | 38+ | 31 |

+ $.09 < p > .05$

* $p < .05$

In the advice category only one age group, the 30-39 year olds, shows a notable tendency to choose within their own age group more often than would be expected if choice were random with respect to age. The younger teachers significantly underchoose their own age group in this area, a fact which may be understandable in terms of the relative inexperience of the youngest teachers. The tendency (nonsignificant) for older teachers (50+) to avoid each other as sources of advice clearly cannot be explained in terms of lack of experience.

Overall, age shows a tendency to be associated with liking. The effect is due mainly to one age group (30-39) that shows a high proportion of in-group choices.

Admiration for teaching skills also shows an overall trend in the direction of within age group choices. Of the four age groups, two have a significant or near-significant tendency to name teachers admired for teaching skills within the chooser's own age group. This may reflect a difference in teaching style among age groups.

An analysis of within age group choices for men and women separately reveals no striking differences, with one exception. Women under 30 years old show a strong tendency to name persons in their own age group for their teaching skills, whereas men under 30 name very few in their own age group.

4. Choice of high status individuals

As mentioned earlier, the principal, vice-principal, and chairmen of departments were defined as having high status; all others as having low status. Choice of high status individuals was examined in the three categories, for all respondents taken together and for men and women separately. In general, high status people are overchosen in proportion to their numbers. Table 4 shows this, and also shows that there is a trend for men to make more high status choices than women in work-oriented categories.

Table 4

Proportion of Choices Given to High Status Persons

| | Observed Proportions | | | Expected Proportions |
|---|---|---|---|---|
| | Advice | Like | Skills | |
| Respondents | | | | |
| Men | 61*** | 28 | 44*** | 19 |
| Women | 49*** | 30* | 28+ | 19 |
| All | 54*** | 29* | 34*** | 19 |

+ $p$ .06

* $p < .05$

*** $p < .001$

In the advice category both men and women choose high status persons very frequently, and men more often than women. This is due largely to the popularity of the principal as advisor. In the like category there is a slight tendency among both sexes to name high status persons more often than would be expected if status had no effect on the choices. In the area of teaching skills, high status persons are overchosen,and again we find that men select high status persons more often than women.

The principal is the overwhelming sociometric star in the advice category. Choice of the principal occurs with virtually the same frequency in the 30-39 and 40-49 age groups (29% and 28%, respectively). It is interesting that the oldest age group outchooses the youngest (62% to 48%). Their frequent choice of the principal may indicate reluctance to admit problems to their juniors, especially in light of the fact that their juniors (or their age-mates, for that matter) very rarely consult them on teaching problems. No other age effects were noted in relation to frequency of high status choices.

5. Friendships and some of their effects

A friendship is operationally defined as mutual choice in the like best category. Analysis of the number of returned choices in this area shows that nearly 40% of the choices were returned, and that 60% of the teachers have one or more of their choices returned.

The mutual like choices usually involve only two people in each group; i.e., distinct friendship groups do not seem to exist, but rather pairs of friends.

An important factor in respect to the chance for getting a choice returned may be the number of years spent at the school. The average number of years at the school for persons having no choices returned was 3.4, for persons having 1 choice returned, 4.4, and for persons with 2 or 3 choices returned, 5.0.

As would be expected, the homophily is stronger if the choice for like is returned than if it is not. Eighty percent of the men's returned choices and 84% of the women's were same-sex choices; i.e., friendships between teachers of the same sex are much more common than friendships that cross sex lines. Only for women, though, is this proportion higher than that observed for all like choices, both mutual and one-way (see Table 1). The proportion of the mutual choice pairs in which both come from the same department is somewhat higher than was found for all like choices made. This proportion varies among departments from 33% to 60%. This figure should be compared with the proportions of all one-way intra-departmental like choices: 24-59%. 80% of the returned choices were between persons in the same age group, compared with 36% for all one-way choices.

It could be expected, insofar as the mutual choices reported above indicate friendships, that these friendships would influence the choices for advice, and to a lesser extent, teaching skills. Analysis of the mutual choices in these two areas shows that the number of mutual choices is very low (22 and 18, respectively, as compared to 70 in the like best category), and that 17% of the persons who return each other's

choices in the like best category also do so in the area of advice; in the area of teaching skills, this proportion is only 5.7%. It seems, therefore, that the mutual friendship choices do not have any significant effect on mutual choices in the areas of teaching skills and advice.

## SUMMARY

It is clear that sex and departmental affiliation have a strong effect on the sociometric choices in all three cateogries. Age shows a less systematic relation to choices than the other two variables.

Men's choices are most strikingly related to sex in the areas of advice and like best; men strongly prefer other men. For women, sex is less important in general, and in the area of advice they prefer opposite rather than same-sex persons. The departmental organization of the faculty affects especially whom one asks for advice and whom one likes best, although some departments showed very strong within-department choices in the area of teaching skills. Choices within the same age group are found most often in the areas of like best and teaching skills. Only one age-group had a high proportion of in-group choices in the area of advice. The relationship of high status to sociometric choice is most pronounced in the advice category, and men are somewhat more disposed to choose high status people than women.

## DISCUSSION

The data described in this paper are based on the most rudimentary variables: age, sex, and departmental affiliation. Nonetheless, a number of systematic and potentially useful findings emerge. Whether these findings are specific to the one school or have moderate or high generality is not known. It seems likely that a variety of structural features of schools, including size, physical features of buildings and rooms, racial composition of faculty and student body, and grade level (elementary, junior or senior high) will affect social interactions among teachers. It would be interesting to know whether the patterns we have observed in one school would appear in similar schools.

The most important finding of this small study may well be the strong organization of male teachers along sex lines. This finding perhaps reflects the sex-role ideology of American society, which is ambivalent at best towards the idea of women working outside the home and stresses differences between the sexes in problem-solving skills and general competence. The fact that women choose men especially when they have a "problem" and need advice highlights their acceptance of this ideology. One other study has examined the effect of sex on sociometric choice (Fennessey, 1968). In that borderline-southern school, sex was not a significant determinant, but for very obvious reasons. The school had a faculty numbering only 21, thirteen of whom were Negro. Unless willing to cross race lines, respondents were more or less obliged to cross sex lines in choosing others. Strong organization along sex lines probably is fostered by a high degree of racial homogeniety

and sufficient size so that people may feel they actually can make choices among others for advice, liking and other functions.

How do social contact patterns of the kind we have observed affect judgments and beliefs? Fennessey found that race was strongly related to attitudes on issues relevant to education, but since race also was strongly related to interaction patterns, similarity in judgments might be due to either the racial orsocial influence mechanism. Interestingly, he found no differences between male and female teachers on most attitude items. One wonders whether this is because of or in spite of their social contact with each other, and whether the sharp division along sex lines in our school would be associated with greater differences in their views.

The role of race, age, sex and other variables, including psychological ones, in the formation of social relationships and the exercise of social influence merits further study. We need to know the particular variables that are associated with interaction for different purposes (e.g., advice vs. friendship); the situations (formal vs. informal) in which influence is exerted or felt; and the variables which have impact on attitudes towards particular issues. As Fennessey has pointed out, which persons influence others may differ considerably for different issues. Further studies are being considered which will explore such matters and will include sociometric questions explicitly relating choices to issues.[6]

## FOOTNOTES

[1]Other reports on this research will be prepared over the course of the next year. This and other research at the same school was carried out jointly by Doris R. Entwisle and the first author. We wish to acknowledge the role played by Dr. Entwisle in helping to establish good working relationships with school personnel.

[2]We are grateful to Gudmund Hernes for his effective presentation of the study, administration of tests, and advice on the sociometric questions and their analysis. Hernes plans to collect some similar kinds of data in a Norwegian school.

[3]Non-respondents were five men and one woman; two were administrators, two were members of a single major department, and one each were teachers in small departments.

[4]A question typically used in sociometric studies of work groups asks, "Whom do you eat lunch with?" Unlike the three questions used in the present study, this question is influenced by factors outside the individual's control. Thus, lunch partners are affected by (a) which people have the same lunch period; (b) which people choose the respondents as a lunch partner; and (c) physical arrangements within the lunchroom. It would be interesting in the future to analyze the degree to which structural factors in the school situation

such as (a) and (c) alter the patterns of relationship that are more or less unaffected by structural constraints.

[5]Small departments are: language arts, speech, music, art, home economics, industrial arts, physical education, administration and guidance, and library.

[6]Sociometric studies of schools are tentatively planned by Greenberger and Martha O. Roseman.

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